

## MR026L Postflight Rehabilitation

MR026L  
SM-FI-053

### 3.2 Medical Requirements Overview

**TABLE 3.2: MEDICAL REQUIREMENTS OVERVIEW**

<b>MRID# and Title:</b>	MR026L Postflight Rehabilitation
<b>Sponsor:</b>	Medical Operations
<b>IPT:</b>	Bone, Muscle, and Exercise
<b>Category:</b>	Medical Requirements (MR)
<b>References:</b>	ISS Medical Operations Requirements Document (MORD) SSP5026: <ul style="list-style-type: none"><li>• Section 3.7.3 Rehabilitation Milestones</li><li>• Section 4.4.1 Rehabilitation</li><li>• Section 6.3 Postflight Re-Adaptation Countermeasures</li></ul> Postflight Rehabilitation Plan JSC 27050
<b>Notes:</b>	N/A
<b>Purpose/Objectives:</b>	The purpose of the postflight rehabilitation plan is to promote the health and safety of returning crewmembers. This plan is devised to actively assist in returning crewmembers to preflight health and fitness levels by planning, implementing, and monitoring an individualized, supervised rehabilitation and health recovery program.
<b>Measurement Parameters:</b>	Physical fitness levels as determined by MRIDs MR077L, Agility and Coordination, MR078L, Functional Fitness, MR079L, Physical Fitness Evaluation: Isokinetic Function, MR080L, Physical Fitness Evaluation: Cycle Ergometer (Graded Exercise Tests – Max and Submax), and other exercises.
<b>Deliverables:</b>	Postflight rehabilitation report
<b>Flight Duration:</b>	≥ 30 days
<b>Number of Flights:</b>	All long duration flights
<b>Number and Type of Crew Members Required:</b>	U.S. prime crew only
<b>Other Flight Characteristics:</b>	N/A

### 3.3 Preflight Training: N/A

**3.4 Preflight Activities:** N/A**3.5 In-Flight Activities:** N/A**3.6 Postflight Activities****TABLE 3.6: POSTFLIGHT ACTIVITIES**

Postflight Activity	Description:	The postflight rehabilitation plan is a 3-phased plan conducted to protect the health and safety of returning long duration crewmembers and to actively assist in the crewmember's return to preflight health and fitness levels.			
	Schedule:	Duration:	Schedule:	Flexibility:	Personnel Required:
		<b>Rehabilitation Phase I:</b> 120 min/day Assisted walking, rest, light activity, hydrotherapy, proprioceptive neuromuscular facilitation techniques, massage, and manual resistance exercises as tolerated.	Landing day through R+3 days	Schedule and activities may change at discretion of Crew Surgeon per the recommendation of the Astronaut Strength Conditioning and Rehabilitation (ASCR) staff.	ASCR, Crewmember and Crew Surgeon
		<b>Rehabilitation Phase II:</b> 120 min/day Warm-up, agility and coordination tasks, cardiovascular exercise, rest and relaxation, massage, hydrotherapy, hydroexercise, proprioceptive neuromuscular facilitation techniques, flexibility and strength exercises, weight training. (see notes)	R+4 – R+14 days		ASCR, Crewmember and Crew Surgeon
		<b>Rehabilitation Phase III:</b> 120 min/day Warm-up, agility and coordination tasks, cardiovascular exercise, rest and relaxation, proprioceptive neuromuscular facilitation techniques, massage, hydrotherapy, flexibility, and strength exercises. (see notes)	R+15 – R+45 days		ASCR, Crewmember and Crew Surgeon

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Ground Support Requirements Hardware/Software	Postflight Hardware:		Postflight Software:		Test Location:	
	Whirlpool, Exercise Equipment, Sauna, Sports Equipment, Swimming Pool, Massage Tab		N/A		U.S./Russia (GCTC)	
Testing Facilities	Minimum Room Dimensions:	Number of Electrical Outlets:		Temperature Requirements:		Special Lighting:
	Gym or Rehab Facility	2(110V) U.S. 2(220V) Russia		Ambient		N/A
	Hot or Cold Running Water:	Privacy Requirements:		Vibration/Acoustic Isolation:		Other:
	Hot & Cold water	Restricted access		N/A		N/A
Constraints/Special Requirements:	<ul style="list-style-type: none"><li>Duty days will include 2 hours of rehab for the first 45 days.</li><li>Weekends and one-day within R+0-R+1 will include only rehabilitation and medical status checks.</li><li>The ASCR and Exercise Physiology Laboratory will make recommendations to the crew surgeon regarding certification of the crewmember for maximal muscle strength testing.</li><li>Upon review of physical progress, the crewmember, the crew surgeon, and the ASCR will determine if the crewmember will need to extend formal rehabilitation past the required 45 days.</li></ul>					
Notes:	The complete postflight rehabilitation plan can be found in JSC 27050 Postflight Rehabilitation Plan. MR077L Agility and Coordination, MR078L Functional Fitness, MR079L Physical Fitness Evaluation: Isokinetic Function, MR080L Physical Fitness Evaluation: Cycle Ergometer (Graded Exercise Tests – Max and Submax) and other exercise tests are scheduled within the rehabilitation period and are considered to be part of the rehabilitation plan.					
Data Delivery	Data/Report to Designated Recipients (Nominal/Contingency):					
	A report form included with the ASCR report summarizing postflight rehabilitation data will be completed by R+45 days for the crew surgeon. All reports will be included in the CMIS database and crewmember medical record.					

**3.7 Summary Schedule****TABLE 3.7: SUMMARY SCHEDULE**

ACTIVITY	DURATION	SCHEDULE	FLEXIBILITY	PERSONNEL REQUIRED	CONSTRAINTS
Preflight Training : N/A					
Preflight : N/A					
In-Flight : N/A					
Postflight					
<u>Rehabilitation Phase I</u> Assisted walking, rest, light activity, hydrotherapy, proprioceptive neuromuscular facilitation techniques, massage, and manual resistance exercises as tolerated.	120 min/day	Landing day through R+3 days	Schedule and activities may change at discretion of Crew Surgeon/ Astronaut Strength Conditioning and Rehabilitation (ASCR) staff.	ASCR, Crewmember and Crew Surgeon	<ul style="list-style-type: none"><li>Duty days will include 2 hours of rehab for the first 45 days.</li><li>Weekends and one-day within R+0-R+1 will include only rehabilitation and medical status checks.</li><li>The ASCR and Exercise Physiology Laboratory will make recommendations to the crew surgeon regarding certification of the crewmember for maximal muscle strength testing.</li><li>Upon review of physical fitness assessment results, the crewmember, the crew surgeon, and the ASCR will determine if the crewmember will need to extend formal rehabilitation past the required 45 days.</li></ul>
<u>Rehabilitation Phase II.</u> Warm-up, agility and coordination tasks, cardiovascular exercise, rest and relaxation, massage, hydrotherapy, hydroexercise, proprioceptive neuromuscular facilitation techniques, flexibility and strength exercises, weight training.	120 min/day	R+4 – R+14 days		ASCR, Crewmember and Crew Surgeon	
<u>Rehabilitation Phase III</u> Warm-up, agility and coordination tasks, cardiovascular exercise, rest and relaxation, proprioceptive neuromuscular facilitation techniques, massage, hydrotherapy, flexibility, and strength exercises.	120 min/day	R+15 – R+45 days		ASCR, Crewmember and Crew Surgeon	
Postflight Debrief : N/A					